

**REMARKS**

Claims 1-40 are all the claims pending in the application. Claims 1, 2, 17-21 and 36-40 have been examined and claims 3-16 and 22-35 have been withdrawn from consideration as being drawn to a non-elected invention. By this Amendment, Applicant editorially amends claim 20. The amendment to claim 20 is made for reasons of precision of language and consistency, and does not narrow the literal scope of the claim and thus does not implicate an estoppel in the application of the doctrine of equivalents.

**Summary of the Office Action**

The Examiner maintained the rejection of claims 20-21 and 36-37 under 35 U.S.C. § 112, second paragraph. In addition, the Examiner rejected claims 1, 2, 17-21 and 36-40 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description. Finally, the Examiner maintained all previous rejections.

**Claim Rejections under 35 U.S.C. § 112, second paragraph**

The Examiner maintained the rejection of claims 20-21 and 36-37 because of a minor informality. Applicant has revised the claim, and respectfully submits that the claims as now presented no longer include the potential informality mentioned by the Examiner. Applicant therefore respectfully requests the Examiner to withdraw this rejection of claims 20-21 and 36-37.

Claim Rejections under 35 U.S.C. § 112, first paragraph

Claims 1, 2, 17-21 and 36-40 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. According to the Examiner, the independent claims 1, 19-20 and 38-40 contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In particular, the Examiner asserted that the subject matter not disclosed by the specification is the claimed disorder indicator representing a non-designated output of said system.

Applicant respectfully requests the Examiner to *carefully reconsider* this position, and to withdraw the rejection, in view of the following points. The originally-filed specification discloses producing waste or giving rise to a measurable features indicating the level of order or disorder in the system. Depending on the type of system, the waste may be heat or noise or may be measured, for example, in terms of success or failure to utilize available resources. Generally, it does not matter how efficiently the system is designed, and whether it is working correctly or not, there is always some waste or disorder. However, the amount or behavior of the waste feature, or pattern or extent of the disorder, may change depending on how the system is working. Hereinafter reference is made to a disorder indicator as a feature that can be measured to indicate waste or disorder in a system (see page 9, lines 16 to 29 of the Specification). There can be no question that the waste is a non-designated output. In the claims, this is “the disorder indicator represents a non-designated output of said system.” No system is designed to output waste or disorder *per se*, and therefore the outputs of this type are not designated outputs.

In other words, the illustrative embodiment of the present invention discloses looking at system outputs that are typically disregarded. That is, the system analyzes waste. For example, disorder indicator may include small deviations from resource allocation that will be considered inside normal operating conditions by the industrial process standards or message generated during operation that are typically disregarded. As disclosed in the specification, the system 10 produces waste which can be represented by a disorder indicator 12 (see Fig. 1; page 9, lines 30 to 31 of the Specification). In fact, the specification discloses that the waste tends to follow a clear and specific behavior, with typical distributions. For example, the dependence of some software based system's internal load on the external load is linear with an extremely high  $R^2$  (see Figs. 7-9; pages 13-14 of the Specification). As a result, failures can be predicted for small deviations that are typically disregarded as within the normal operating range because the waste indicator has very typical, specific characteristics during the normal operation of the system.

The Examiner alleges that the specification only discloses the disorder indicator being the designated output. For support the Examiner cites: "[p]referably, the measurement unit uses only routine data traffic in order to gather sufficient information for regular monitoring of a disorder indicator," (see page 10, lines 29-31). Applicant respectfully points out that this passage of the specification does not imply that the disorder indicator is the designated output.

This part of the specification discloses that it is preferable to use routine data for monitoring or measuring waste in the system. In other words, different data may generate different waste and different level of order or disorder. In order to create a statistical description that most closely resembles idealized or normalized behavior, it is preferable to use routine data,

thereby routine or normal amount of waste is most likely to be produced, and most accurate or idealized behavior of the disorder indicator can be generated.

Since the originally-filed specification fully supports the requirements for a disorder indicator representing non-designated output or waste as explained above, it is clear that the written description requirement is met. One of skill in this field understands that waste is not the designated output. The specification is written to the level of the artisan of ordinary skill, and need not explain everything to the level of the average person. Because the specification clearly describes the disorder indicator representing waste or the non-designated output, Applicant respectfully submits that the inventor clearly had possession of the invention at the time of the filing of the application.

For all of the foregoing reasons, Applicant respectfully submits that the rejected claims are enabled by the originally-filed specification, and that the originally-filed specification meets the written description requirement. Applicant therefore requests the Examiner to withdraw this rejection under 35 U.S.C. §112, ¶1.

Claim Rejections under 35 U.S.C. § 102

Claims 1, 2, 17-21 and 36-39 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,586,066 to White et al. (hereinafter “White”) and claim 40 as being anticipated by U.S. Patent No. 5,655,074 to Rauscher (hereinafter “Rauscher”). Applicant respectfully traverses these rejections in view of the following remarks.

In the response filed on January 2, 2004, Applicant pointed out that the requirements relating to the disorder indicator representing non-designated output are unmet in White and Rauscher. The Examiner's final rejection notes Applicant's arguments, but indicated that the Examiner believes the requirements relating to the disorder indicator representing non-designated output to constitute impermissible new matter. Because the requirements were thought to be new matter, the Examiner did not give the requirements any patentable weight (see page 8 of the Final Office Action).

In addition, the Examiner appears to allege that even if White does not teach or suggest the indicator being a non-designated output. This recitation is met by combining applicant's admitted prior art and White. In particular, the Examiner alleges that White teaches that the industrial system 14 can "include without limitation a nuclear power station, fossil power stations, automobiles, aircraft, shops, water and waste treatment facilities, manufacturing lines, pumping stations, environmental systems, gas lines, chemical processing systems, pharmaceutical manufacturing systems and biomedical systems," and that the specification discloses that "engineers often use the sound to get the feel for the presence of a problem". As such, the Examiner alleges that it would have been desirable to monitor the sound or vibration disorders (see pages 7-8 of the Final Office Action).

Applicant respectfully submits that the Examiner is impermissibly broadening the disclosure in White's patent, and that the Examiner is exercising impermissible hindsight reconstruction. To begin, the specification of the present application only discloses that engineers may listen to the mechanical system, for example, to get the feel for the presence of a

problem (e.g., just like one would listen to the car's engine to determine if there is a problem).

The White specification, however, does not disclose that it is known to implement such techniques in statistical apparatuses or apparatuses for predicting failure in the system. White only teaches carrying out surveillance of industrial processes with correlated sensor parameters.

Although it is desirable to monitor waste, as disclosed by the present invention, one of ordinary skill in the art would not have been motivated to include sound, as alleged by the Examiner, when sound is a non-designated output of the monitored system into the surveillance process of White. A simple evidence of this is that such output has not been included into White's process. Engineers have been listening to the mechanical systems (e.g., car's engine) for many years now, obviously prior to the White's teachings, and yet, White did not include sound as one of the parameters that should be measured. In fact, White does not even mention or suggest using any of the non-designated outputs as parameters (col. 2, lines 62 to 67). In short, hindsight of the type being used by the Examiner, where the only motivation for such a construction comes from Applicant's own disclosure, has repeatedly been held to be improper and ineffective in supporting an argument of *prima facie* obviousness. *See, e.g., In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992); *In re Bond*, 15 USPQ2d 1556 (Fed. Cir. 1990); *In re Laskowski* 10 USPQ2d 1397 (Fed. Cir. 1989). On the present record, the references simply do not provide the impetus to do what the inventor did.

In short, the invention defined by the independent claims is different. Independent claims require "the disorder indicator represents a non-designated output of said system". Therefore, Applicant respectfully submits that claims 1, 2, 17-21 and 36-40 are patentably distinguishable

from White and Rauscher. Both, White and Rauscher use the designated output for statistical analysis and cannot now be said to meet the above identified requirements of the independent claims, and would not have rendered unpatentable or anticipated the invention as defined by these claims within the meaning of 35 U.S.C. § 102. For all of the foregoing reasons, therefore, applicant respectfully requests the Examiner to withdraw this rejection of claims 1, 2, 17-21 and 36-40.

Conclusion

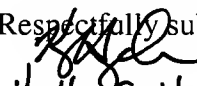
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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